T02080" 29TT2660

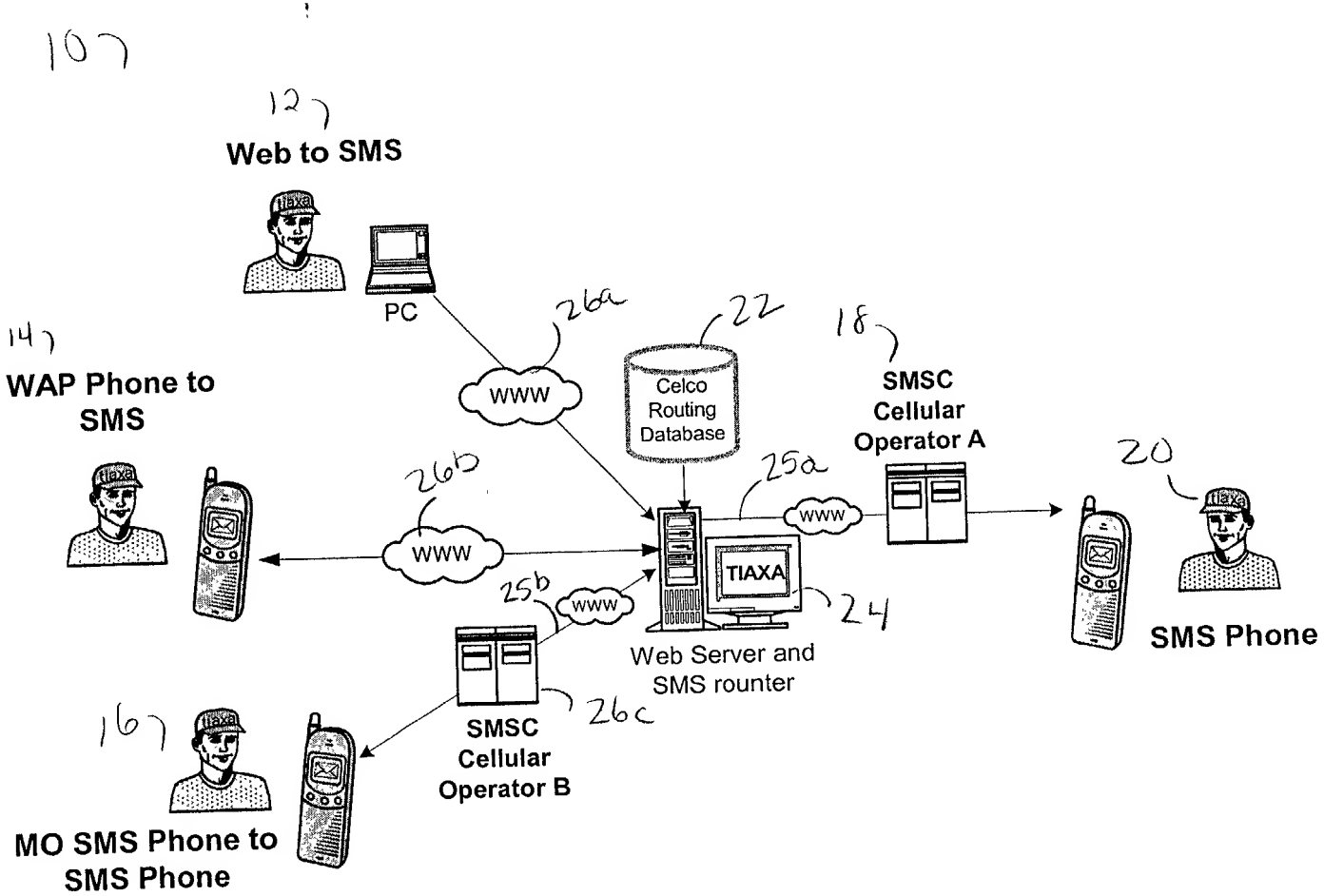


FIGURE 1

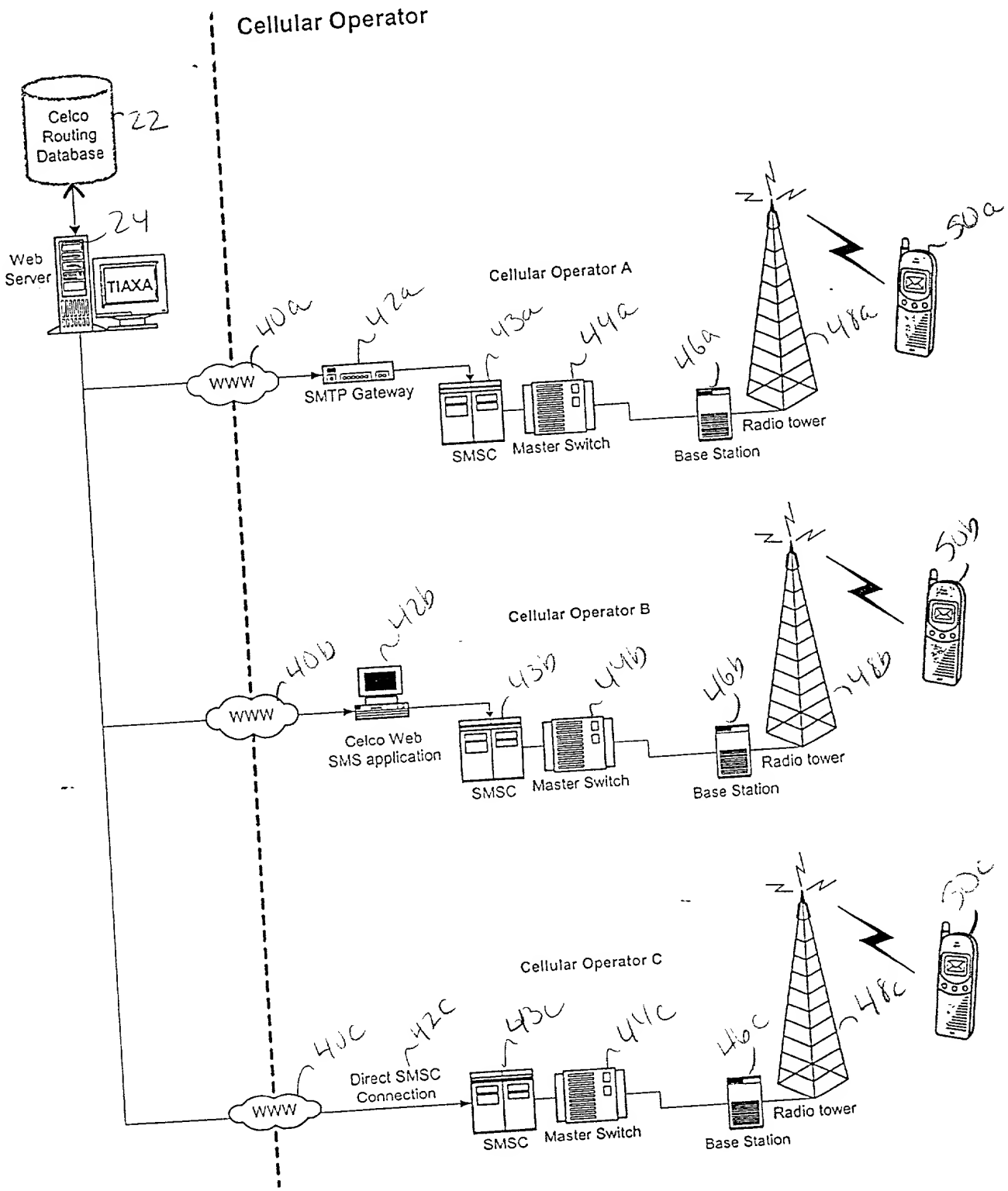

60
Cellular Operator
Celco Routing Database
22
24
Web Server
TIAXA
40a
42a
43a
44a
46a
48a
50a
WWW
SMTP Gateway
SMSC
Master Switch
Base Station
Radio tower
Cellular Operator A
40b
42b
43b
44b
46b
48b
50b
Celco Web SMS application
Cellular Operator B
40c
42c
43c
44c
46c
48c
50c
Direct SMSC Connection
Cellular Operator C

FIGURE 1A

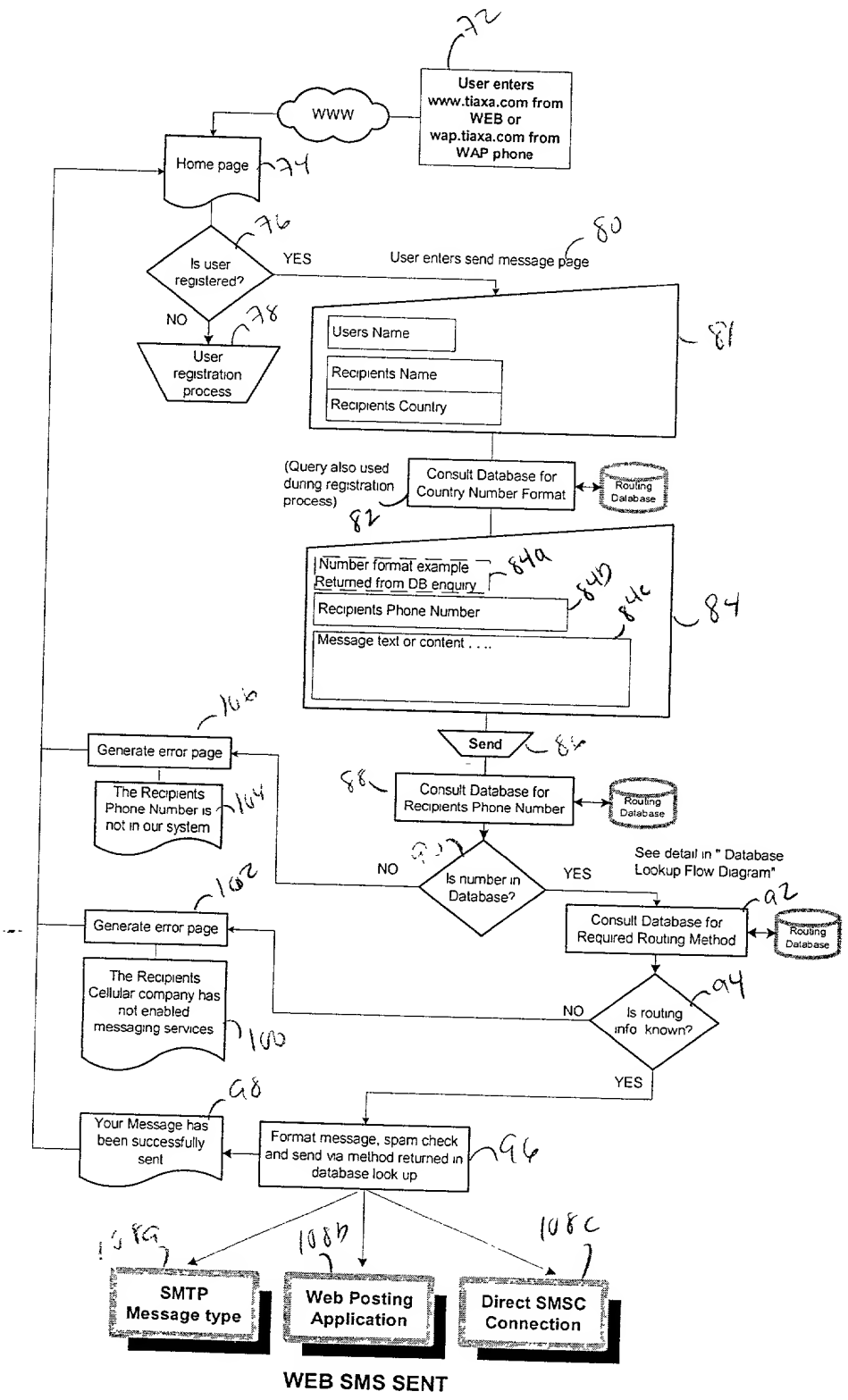
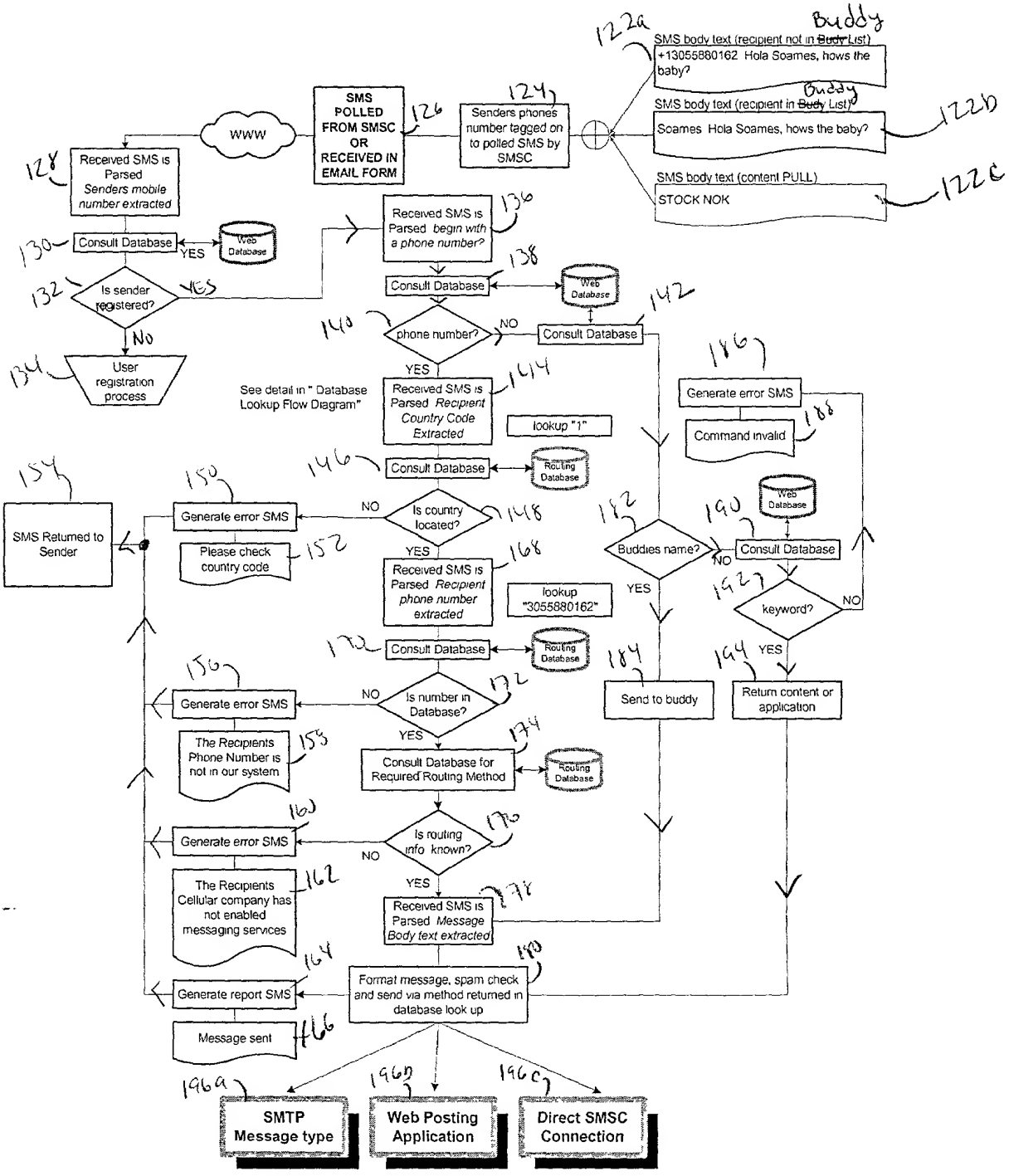

User enters www.tiaxa.com from WEB or wap.tiaxa.com from WAP phone
WWW
Home page
Is user registered?
YES
NO
User registration process
User enters send message page
Users Name
Recipients Name
Recipients Country
(Query also used during registration process)
Consult Database for Country Number Format
Routing Database
Number format example Returned from DB enquiry
Recipients Phone Number
Message text or content . . .
Send
Generate error page
The Recipients Phone Number is not in our system
Consult Database for Recipients Phone Number
Routing Database
NO
Is number in Database?
YES
See detail in " Database Lookup Flow Diagram"
Generate error page
The Recipients Cellular company has not enabled messaging services
Consult Database for Required Routing Method
Routing Database
NO
Is routing info known?
YES
Your Message has been successfully sent
Format message, spam check and send via method returned in database look up
SMTP Message type
Web Posting Application
Direct SMSC Connection
WEB SMS SENT

FIGURE 2



MO SMS FORWARDED

FIGURE 3

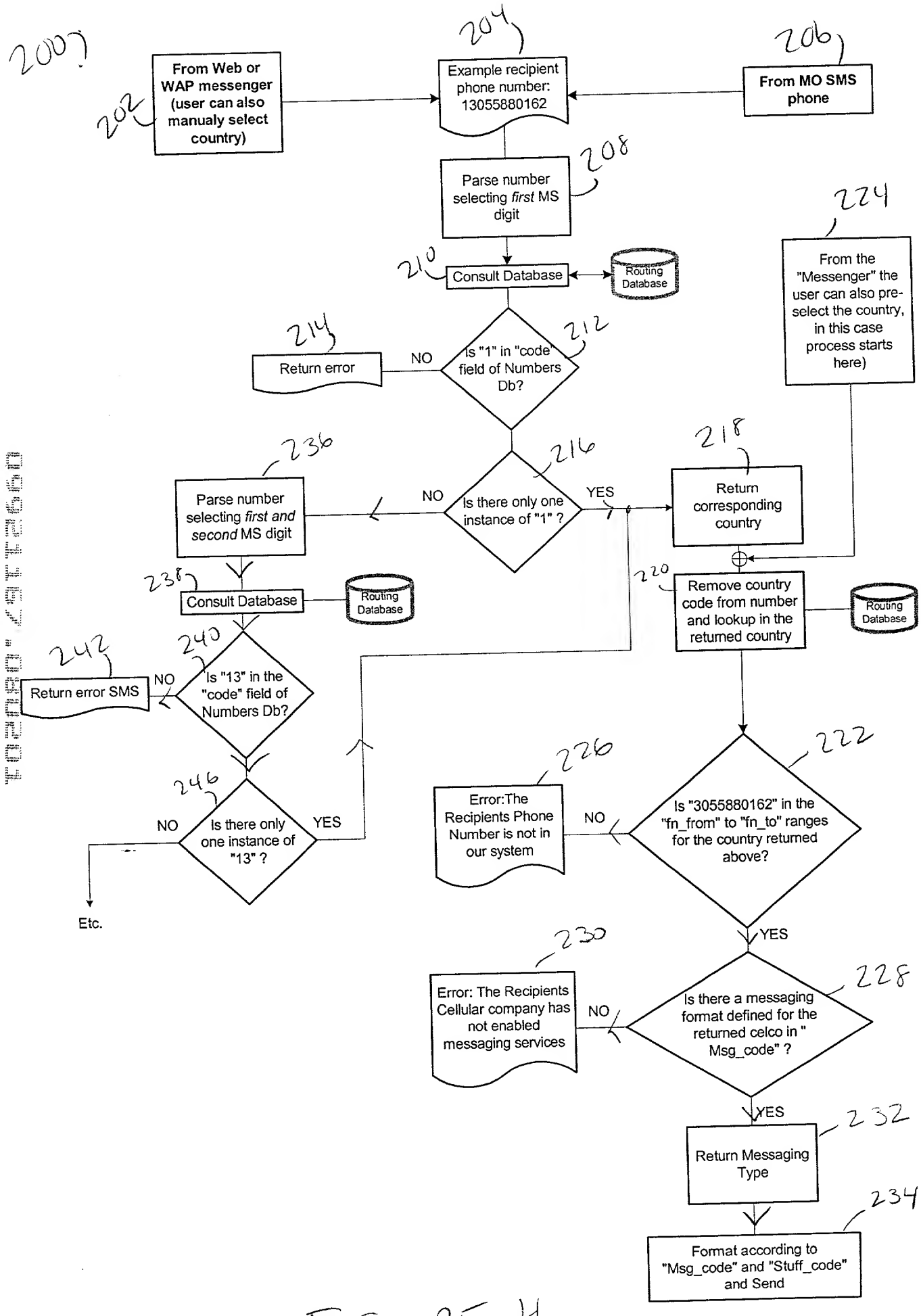

200
202
From Web or WAP messenger (user can also manualy select country)
204
Example recipient phone number: 13055880162
206
From MO SMS phone
208
Parse number selecting first MS digit
210
Consult Database
Routing Database
212
Is "1" in "code" field of Numbers Db?
214
Return error
NO
224
From the "Messenger" the user can also pre-select the country, in this case process starts here)
216
Is there only one instance of "1" ?
NO
YES
218
Return corresponding country
236
Parse number selecting first and second MS digit
238
Consult Database
Routing Database
240
Is "13" in the "code" field of Numbers Db?
242
Return error SMS
NO
246
Is there only one instance of "13" ?
NO
YES
Etc.
220
Remove country code from number and lookup in the returned country
Routing Database
222
Is "3055880162" in the "fn_from" to "fn_to" ranges for the country returned above?
226
Error:The Recipients Phone Number is not in our system
NO
YES
228
Is there a messaging format defined for the returned celco in " Msg_code" ?
230
Error: The Recipients Cellular company has not enabled messaging services
NO
YES
232
Return Messaging Type
234
Format according to "Msg_code" and "Stuff_code" and Send

FIGURE 4

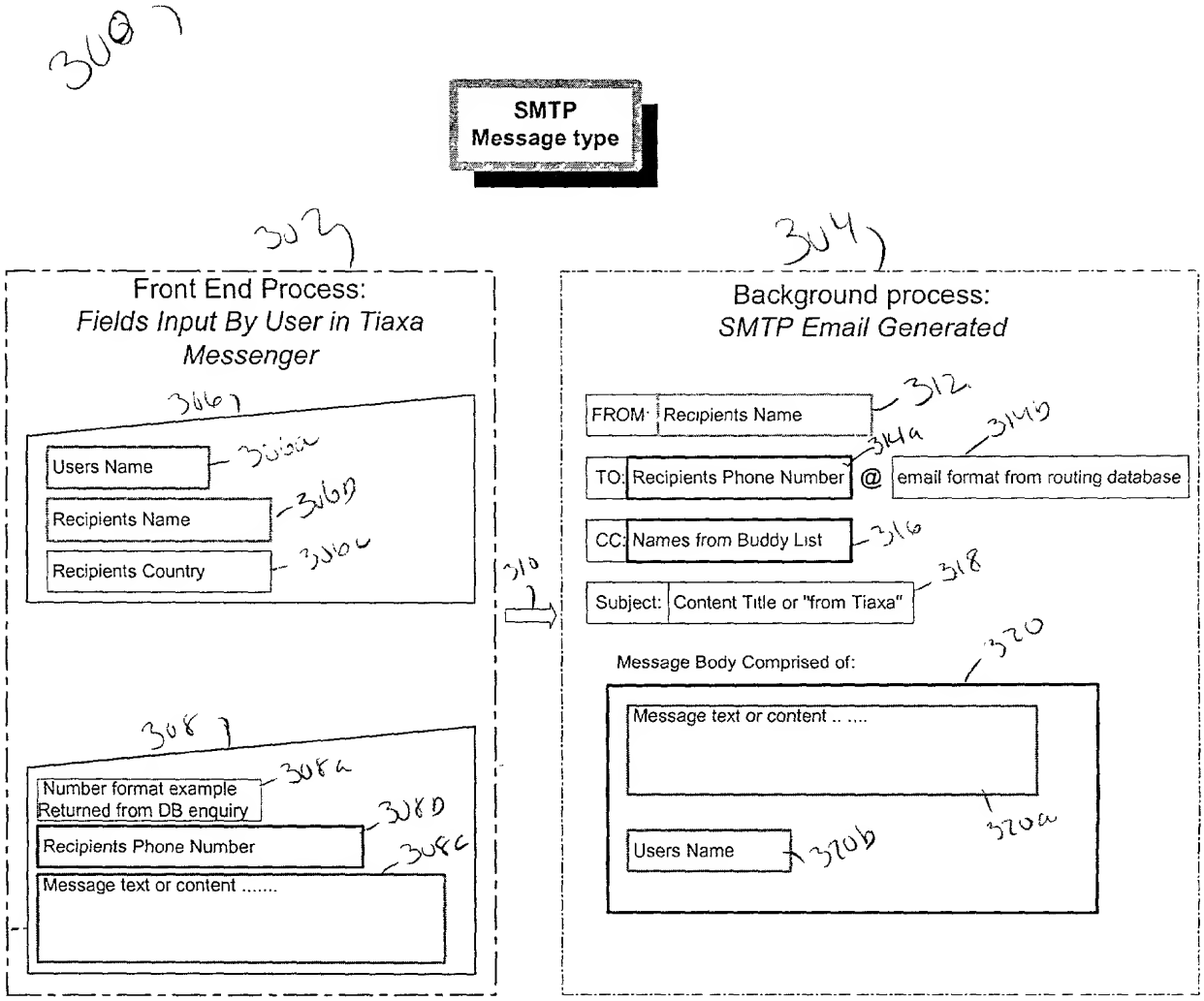

SMTP
Message type
Front End Process:
Fields Input By User in Tiaxa Messenger
Users Name
Recipients Name
Recipients Country
Number format example Returned from DB enquiry
Recipients Phone Number
Message text or content .....
Background process:
SMTP Email Generated
FROM: Recipients Name
TO: Recipients Phone Number @ email format from routing database
CC: Names from Buddy List
Subject: Content Title or "from Tiaxa"
Message Body Comprised of:
Message text or content .. ....
Users Name

FIGURE 5

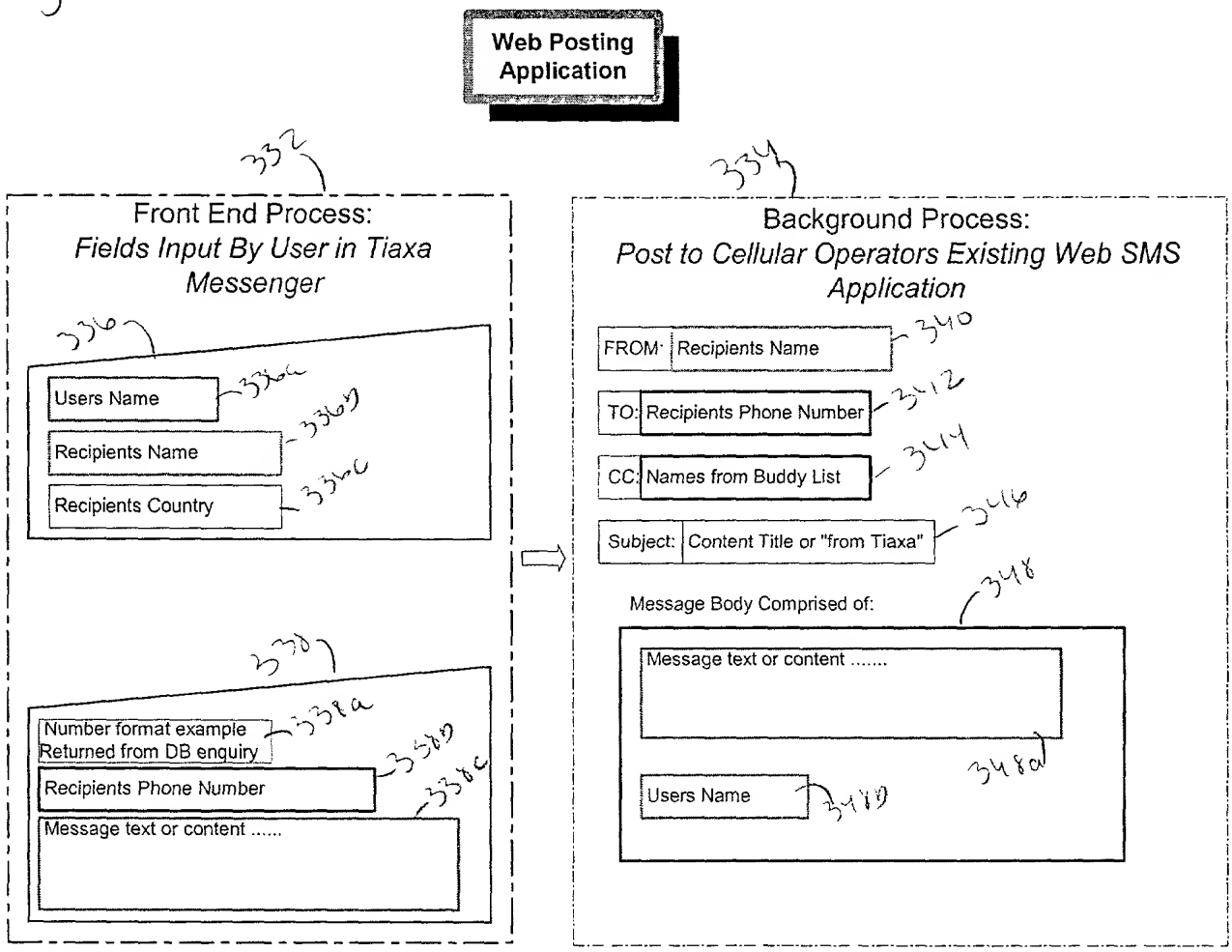

Web Posting Application
Front End Process:
Fields Input By User in Tiaxa Messenger
Users Name
Recipients Name
Recipients Country
Number format example Returned from DB enquiry
Recipients Phone Number
Message text or content .....
Background Process:
Post to Cellular Operators Existing Web SMS Application
FROM: Recipients Name
TO: Recipients Phone Number
CC: Names from Buddy List
Subject: Content Title or "from Tiaxa"
Message Body Comprised of:
Message text or content .....
Users Name

FIGURE 6

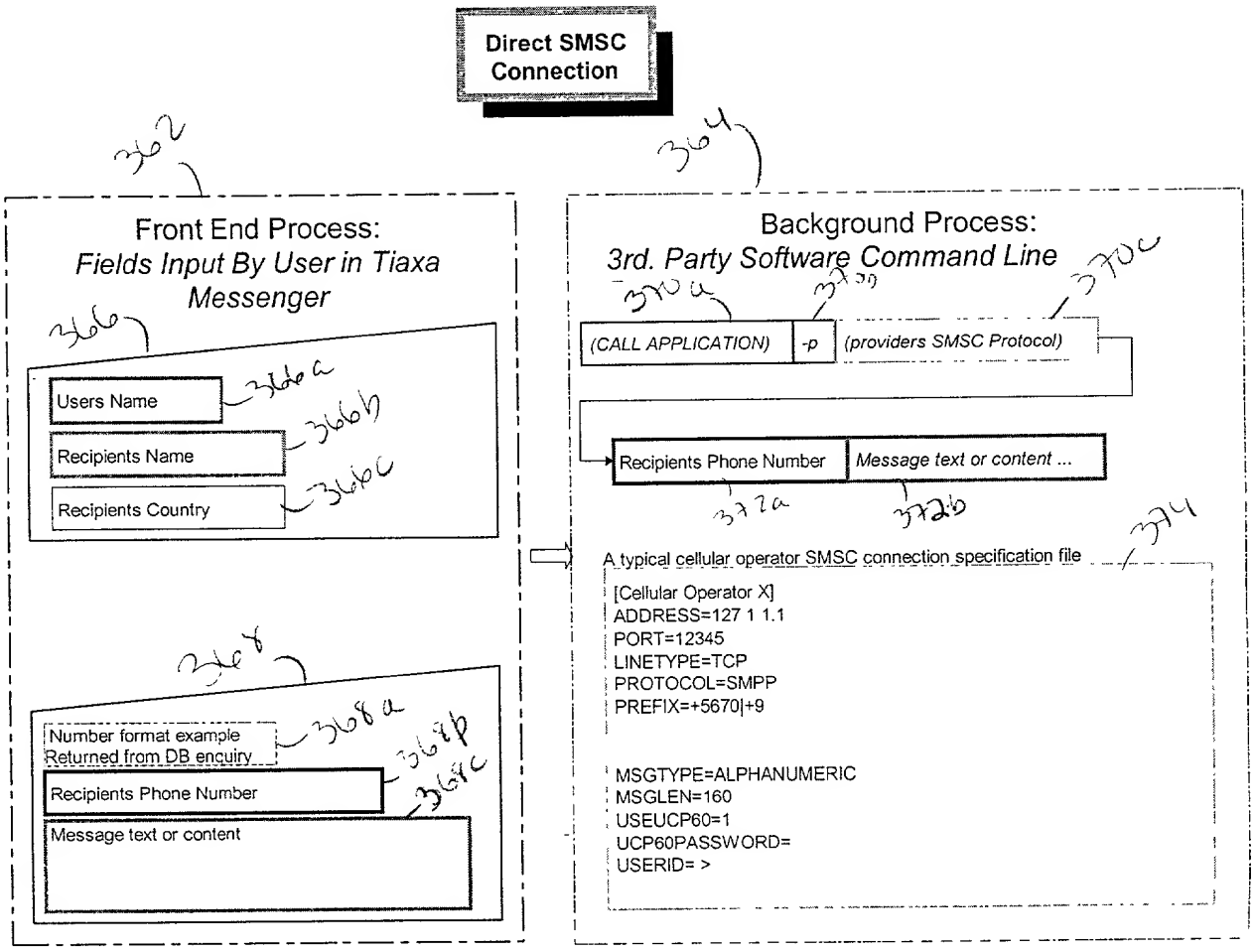

Direct SMSC Connection
Front End Process:
Fields Input By User in Tiaxa Messenger
Users Name
Recipients Name
Recipients Country
Number format example Returned from DB enquiry
Recipients Phone Number
Message text or content
Background Process:
3rd. Party Software Command Line
(CALL APPLICATION)
-p
(providers SMSC Protocol)
Recipients Phone Number
Message text or content ...
A typical cellular operator SMSC connection specification file
[Cellular Operator X]
ADDRESS=127 1 1.1
PORT=12345
LINETYPE=TCP
PROTOCOL=SMPP
PREFIX=+5670|+9
MSGTYPE=ALPHANUMERIC
MSGLEN=160
USEUCP60=1
UCP60PASSWORD=
USERID= >

FIGURE 7

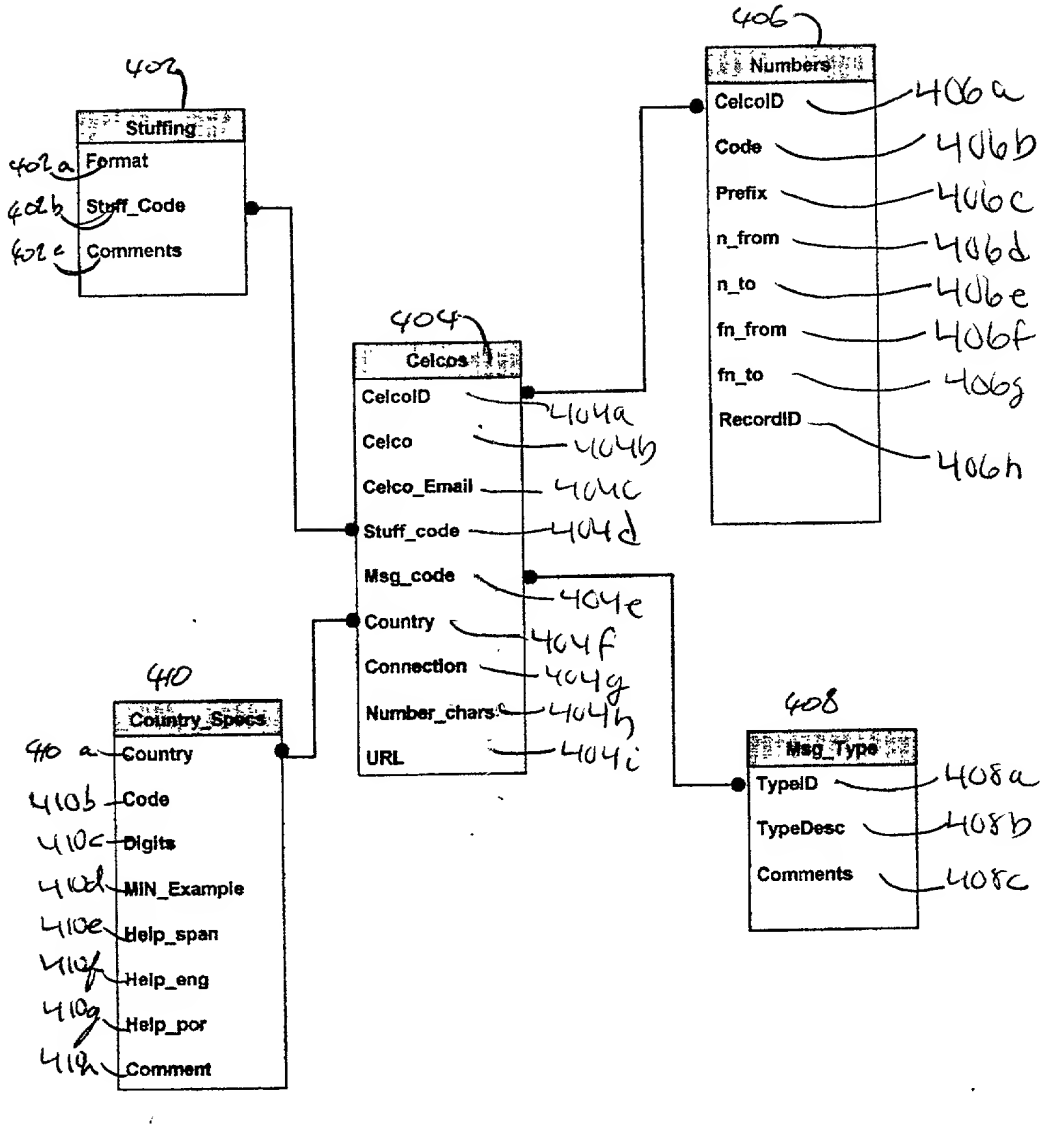

402
Stuffing
402a Format
402b Stuff_Code
402c Comments
404
Celcos
CelcoID
Celco
Celco_Email
Stuff_code
Msg_code
Country
Connection
Number_chars
URL
404a
404b
404c
404d
404e
404f
404g
404h
404i
406
Numbers
CelcoID
Code
Prefix
n_from
n_to
fn_from
fn_to
RecordID
406a
406b
406c
406d
406e
406f
406g
406h
408
Msg_Type
TypeID
TypeDesc
Comments
408a
408b
408c
410
Country_Specs
410a Country
410b Code
410c Digits
410d MIN_Example
410e Help_span
410f Help_eng
410g Help_por
410h Comment

FIGURE 8

402

Example of contents of "Stuffing" Table

Format (402a)	Stuff_Code (402b)	Comments (402c)
no comments	0	
(number)@email	1	
(prefix)(number)@email	2	
(stuffed " 0")(prefix)(stuffed " 15")(number)@email	3	
(stuffed " 1")(area)(number)@email	4	
(stuffed " 15")(number)@email	5	
(stuffed " 52")(prefix)(number)@email	6	
(stuffed 0")(prefix)(number)@email	7	
" mensajes" @email	8	Celco X -- all emails are sent to mensajes@email
" nexmail" @email	9	Celco Y -- all emails are sent to nexmail@email
(stuffed " 706")(number)@email	10	Celco W
(stuffed " 076")(number)@email	11	Celco W
(number)	12	http://web.wepostapp.com/
(number)	13	application

FIGURE 9

404)

Example of contents of "Celcos" Table

CelcoID (404a)	Celco (404b)	Celco_Email (404c)	stuff_code (404d)	msg_code (404e)	country (404f)	Connection (404g)	Number_chars (404h)	URL (404i)
CTIARGE	CTI Argentina	cti.com.ar	2	0	AR	email	100	www.cti.com
BAHACELL	Baja Celular	bajacelular.com.mx	6	0	MX	email	100	www.baja.com
IUSACELL	Iusacell	iusacell.com.mx	2	0	MX	email	100	www.iusa.com
NORCEL	Norcel	norcel.com.mx	6	0	MX	email	100	www.norcel.com
PORTATEL	Portatel	unknown	0	0	MX		120	www.porta.com
TELCELMX	Telcel Mexico	unknown	0	0	MX		115	www.telcel.com
BELLPE	BellSouth Peru	unknown	0	0	PE		115	www.bspe.com
NEXTELPERU	Nextel Peru	nextel.com.pe	9	3	PE	email	130	www.nxtl.com
TELEFOPE	Telefonía Peru	telefon.com.pe	8	4	PE	email	120	www.telepe.com
6462	360 COMMUNICATIONS - VIRGINIA	atel.com	2	0	US	email	120	www.atel.com
6228	AB CELLULAR HOLDING	mobile.att.net	2	0	US	SMPP		www.att.com

FIGURE 10

406)

Example of contents of "Numbers" Table

406a CelcoID	406b Code	406c Prefix	406d n_from	406e n_to	406f fn_from	406g fn_to	406h recordid
TELEFOPE	51	1	8600000	8699999	18600000	18699999	1
TELEFOPE	51	1	9900000	9999999	19900000	19999999	9
BELLPE	51	1	9500000	9599999	19500000	19599999	15
NEXTELPERU	51	1	8100000	8199999	18100000	18199999	16
BAHACELL	52	1	1010000	1016999	11010000	11016999	17
BAHACELL	52	6	6910000	6919999	66910000	66919999	99
BAHACELL	52	113	95000	96999	11395000	11396999	103
IUSACELL	52	4	7280000	7281999	47280000	47281999	462
IUSACELL	52	4	7282000	7282999	47282000	47282999	463
NORCEL	52	17	450000	459999	17450000	17459999	1029
NORCEL	52	17	460000	469999	17460000	17469999	1030
NORCEL	52	17	580000	589999	17580000	17589999	1031
NORCEL	52	169	10000	19999	16910000	16919999	1032
PORTATEL	52	93	906000	909999	93906000	93909999	1190
PORTATEL	52	93	930000	935999	93930000	93935999	1191
TELCELMX	52		59840000	59849999	59840000	59849999	3805
TELCELMX	52		59910000	59919999	59910000	59919999	3806
TELCELMX	52		59950000	59959999	59950000	59959999	3807
TELCELMX	52		59970000	59979999	59970000	59979999	3808
CTIARGE	54	11	41500000	41509999	1141500000	1141509999	3809
6462	1	804	9890000	9899999	8049890000	8049899999	8120
6462	1	804	9960000	9969999	8049960000	8049969999	8121
6228	1	310	2000000	2009999	3102000000	3102009999	8122

FIGURE 11

408

Example of contents of "Message Type" Table

TypeID (408a)	TypeDesc (408b)	comments (408c)	Application Destination (408d)
0	Put [Message] In The Email Body	normal	
1	Put [Message] In The Email Subject		
2	Put [subject],[Message] In The Email Subject		
3	Put [StuffedNumber [Message]] in Email Subject	celco A	
4	Put [StuffedNumber] in Email Subject , [Message] In The Email Body	celco Z	
5	Call Web posting:	Celco B	http://web.wepostapp.com/
6	Call direct SMSC connection application:	Celco C	application

FIGURE 12

410

Example of contents of "Country specs." Table

country (410a)	code (410b)	digits (410c)	MIN_example (410d)	Help_Span (410e)	Help_eng (410f)	Help_port (410g)	Comment (410h)
AR	54	10	11 (sin "15") 412345	help text in english	help text in Spanish	Help text in portugese	notes
BR	55	10	2712345				
EEUU	1	10	305123456				

FIGURE 13